Respiratory Medicine (2004) **98**, 504–508

respiratoryMEDICINE

The development of the first nurse-led bronchoscopy post in the United Kingdom

P.V. Barber*, J. Martin, P.N.S. O'Donnell

The North West Lung Centre, Wythenshawe Hospital, Manchester, M23 9LT, UK

Received 22 September 2003; accepted 11 December 2003

KEYWORDS
Nurse-led bronchoscopy;
Nurse bronchoscopist;
Training;
Service

Summary Nurses routinely practice Gastrointestinal endoscopy in the United Kingdom (UK) but, to our knowledge, bronchoscopy has never been introduced as a nursing discipline. The need for a nurse bronchoscopist was identified within our respiratory unit and the post was developed. This process involved: (1) seeking a precedent for the role of nurse bronchoscopist, (2) designing an appropriate teaching programme, (3) obtaining hospital accreditation for the programme, (4) supervising and completing the training, and (5) implementing a nurse-led bronchoscopy service.

The development phase took approximately 1 year. No precedent was found for nurse-led bronchoscopy in the UK or elsewhere. The training programme defined minimum entry requirements and was modelled on UK nurse GI endoscopy training and the British Thoracic Society bronchoscopy guidelines. The role of nurse bronchoscopist was deemed to comply with professional codes of nursing practice by the chief nurse and the hospital management board authorised a service framework for the post.

The first trainee completed the programme in January 2003 and has now examined 125 patients independently [endobronchial tumour biopsy hit-rate = 95% (95% CI 76–99%)]. The post of nurse bronchoscopist has been successfully developed and accredited within our hospital.

Introduction

Nurses in the UK are increasingly taking on advanced clinical roles to meet the changing needs of the National Health Service. Gastrointestinal (GI) endoscopy was introduced as a nursing specialisation in the 1990s in response to escalating demands on gastroenterology services, and interest from both medical and nursing professions.[1] This initiative was supported by the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC)—now the Nursing and Midwifery Council (NMC) and the British Society of Gastroenterology which, in 1994, issued recommendations which enabled suitably trained nurses to carry out uncomplicated upper and lower GI endoscopy.[2]

Nurse-led bronchoscopy could potentially impact upon evolving service pressures worldwide due to the increasingly global epidemic of lung cancer[3] and the adoption of national guidelines aimed at rapid diagnosis and staging of disease.[4] Locally, growing service requirements, a lack of practice consistency due to the rapid turnover of trainee medical staff, and the prospect of facilitating interventional techniques prompted the suggestion that a nurse bronchoscopist would be a useful asset to our bronchology unit within a respiratory tertiary

*Corresponding author. Tel.: +44-161-291-2721; fax: +44-161-291-2919.
E-mail address: helen.taylor@smuht.nwest.nhs.co.uk (P.V. Barber).

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doi:10.1016/j.rmed.2003.12.015

referral centre. The creation of this new role raised a number of issues concerning training, clinical competence, accreditation and legal support,[5] all requiring attention before a safe and effective service could be established.

The evidence base

In order to develop a credible training programme, we sought to identify prior experience with nurse bronchoscopy elsewhere through informal enquiries directed at other bronchoscopy units, the British Thoracic Society (BTS) bronchoscopy guideline committee, international representatives of bronchoscopy equipment manufacturers, and a literature search comprising Medline, Embase, and CINAHL databases using the main search terms:- ''nurse'', ''bronchoscopy'' and ''bronchoscopist''. Nurse bronchoscopy was also raised with members of the NMC at the ''professional and legal issues for clinical nurse specialists'' UK study day in September 2002 and the subject was opened to the floor at the Advanced Respiratory Nurse Specialists' annual UK conference in November 2002. None of these approaches identified a precedent for nurse bronchoscopy in the UK or elsewhere, although specialist respiratory physiotherapists were identified in London and Guildford who had practiced therapeutic bronchoscopy after being trained by consultant physicians. Subsequently, nurse GI endoscopists working in our hospital were consulted to explore parallels with the development of their speciality.

Nurse bronchoscopy training and implementation

The nurse bronchoscopy training protocol was modelled on that of nurse GI endoscopy,[2] BTS recommendations[6] and a comprehensive teaching manual,[7] with source material derived from high-quality reference texts.[8,9] Minimum requirements for entry into the programme (panel 1) were designed to recognise the need for substantial prior respiratory knowledge and bronchoscopy unit experience. Core aspects of the training protocol are summarised in panel 2.

The programme specified that a portfolio be maintained as evidence of training completed and skills acquired. This included individual competencies such as consent for flexible bronchoscopy and the safe administration and reversal of intravenous sedation, together with a record of each procedure signed by a nominated training supervisor. We have suggested that the nurse specialist should complete around 75 procedures a year for continuous training, comparable with the experience of physician trainees.[10]

A framework for the implementation of a nurse bronchoscopy service was designed (Fig. 1) to address issues of referral guidelines for a nurse-led bronchoscopy list, the need for regular audit, and ongoing specialist training (e.g. in transbronchial biopsy and needle aspiration).

Legal support and hospital accreditation for nurse bronchoscopy

Legal backing from UK professional nursing institutions and medical defence organisations for nurse-led GI endoscopy was dependent on hospitals undertaking vicarious liability for the service, so accreditation for nurse-led bronchoscopy was sought at management level. This in turn required that the role should fall within the defined scope of UK professional nursing practice.[11–13] Clinical and pharmacy management approval was also needed for Patient Group Directions (PGDs), protocols authorising the administration of non-prescribed drugs by nurses in England.[14]

Outcomes

The training programme proposal was agreed and supported by the hospital respiratory consultant body. The role of nurse bronchoscopist was deemed

- A background of respiratory education at degree level.
- A minimum of 6 months pre-training observation period on the bronchoscopy unit.
- Competency with maintenance and cleaning of bronchoscopy equipment.
- Competency at ivcannulation.
- Completion of an advanced life support training module.

Panel 1 Minimum requirements for entry into nurse bronchoscopy training programme.

Trainee to obtain theoretical knowledge from:-

- Training supervisors i.e. nominated consultants practising bronchoscopy.
- Stradling, P. (1991) *Diagnostic bronchoscopy, a teaching manual, 6th Ed.*
- Shaw, J.D. and Lancer, J.M. (1987) *A colour atlas of fibreoptic endoscopy of the upper respiratory tract.*
- Prakash, U. (1997) *Bronchoscopy.*

Trainee to observe:-

- Flexible bronchoscopy using nasal or oral approach, together with both nasal and trans-tracheal topical anaesthesia.
- Rigid bronchoscopy
- Nasal endoscopy

Clinical training (each step to be assessed as competent by a nominated lead training supervisor):-

- A minimum of 4 weeks practical experience using a bronchoscopy training model.
- A minimum of 100 bronchoscopy procedures under direct supervision of a training supervisor.
- A further 100-150 bronchoscopy procedures under indirect supervision of a training supervisor.
- Competency at both nasal and oral approach
- Competency at performing bronchial trap / wash, bronchial brushing, bronchial biopsy and bronchoalveolar lavage. BTS standards for sampling to be followed as evidence based practice.
- Completion of investigation request forms and bronchoscopy reports.
- Clinical assessment and communication with patients pre- and post-procedure.

Panel 2 Core clinical aspects of the nurse bronchoscopy training programme.

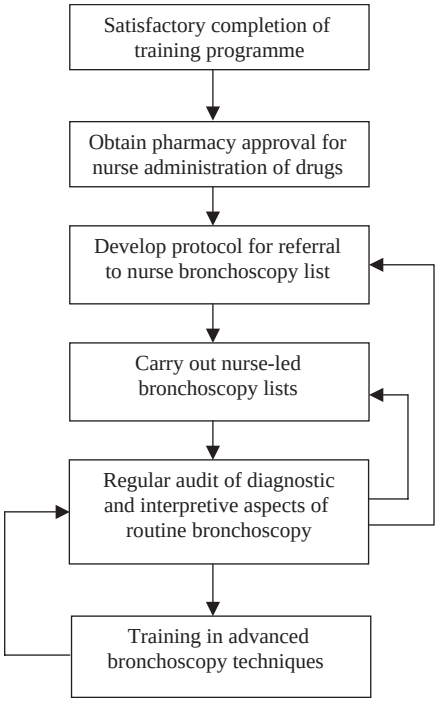

Figure 1 The implementation of a nurse-led bronchoscopy service.

by the chief nurse to comply with UKCC higher level of practice standards[12] and the NMC's current code of professional conduct.[13] The complete service framework was subsequently approved by the hospital Nursing and Midwifery management board and is available on our website (www.smtr.nhs.uk./nursebronch). PGDs for intravenous midazolam and flumazenil, and for nebulised bronchodilators (available on the same website) were endorsed by our Medicines Management Committee. A protocol for referral to the nurse-led list (panel 3) was detailed in the service framework document, paving the way for initiation of a nurse-led service. The entire process of development and sanctioning of nurse bronchoscopy took approximately 1 year.

Our nurse trainee had 20 years' experience as a respiratory nurse specialist, including 8 years in bronchoscopy. The lead training supervisor for the programme was the consultant in charge of the bronchology department (Dr. Phil Barber) and training took place during routine, planned bronchoscopy lists. Five other consultants were nominated as additional supervisors.

The trainee completed the programme satisfactorily (including competencies at bronchial washing, brushing, biopsy and bronchoalveolar lavage) in January 2003, and has now carried out 325 full examinations. Of these, 125 were performed independently (with a physician bronchoscopist available for consultation) with no adverse events. Audit of nurse sampling of the 20 bronchoscopically

Referrals to be made through the bronchoscopy unit secretary or directly from respiratory consultants.

Inclusion criteria:-

- Inpatient referrals following review by a respiratory team.
- Tertiary and outpatient GP referrals following review by a respiratory consultant.

Exclusion criteria:-

- Bronchoscopy that needs to be performed outside the bronchoscopy unit.
- Bronchoscopy on inpatients from the Intensive Care Unit, the High
- Dependency Unit or the Coronary Care Unit.
- Patients with grossly reduced cardio-respiratory reserve resulting in hypoxia (O_2 satn.<92% or respiratory rate >20 on air), or type 2 respiratory failure (pCO_2 >50mmHg on air).
- Patients with known or suspected bleeding disorder, e.g. thrombocytopenia (platelets <50), or anticoagulation (INR >1.5).
- Patients with a recent history (< 6 weeks) of myocardial infarction.
- Patients with a current chest infection.
- Patients with stridor / upper airways obstruction.
- Patients with superior vena caval obstruction.
- Patients who need transbronchial biopsy or needle aspiration until more experience is gained.
- Patients who require therapeutic / interventional bronchoscopy.

Panel 3 Guidelines for referral to the nurse-led bronchoscopy list.

malignant lesions visualised to date showed a positive histology hit rate of 95% (95% CI 76–99%), which compares favourably with physician bronchoscopist results[15] and the suggested BTS standard of 80%.[6]

Discussion

The development of nurse bronchoscopy has been a complex process, requiring extensive consultation and approval at various levels of authority. The UK legal and professional basis for the service is sound, and the clinical training is safe, well supervised, rigorous and formal. Our nurse specialist found the experience to be challenging, interesting and rewarding, and has become a skilled operator.

It should be stressed that only one nurse has so far been trained using this method. Further evaluation for a larger group of trainees is needed before the programme could be endorsed by professional medical bodies and used, for example, as the basis for national nurse bronchoscopy guidelines. The service framework has also been developed according to a purely English model, and aspects of hospital and legal accreditation would be unlikely to apply outside this country.

Not every respiratory department will have the need for a nurse bronchoscopist, and some may have concerns about nurses doing a procedure that has such critical diagnostic importance. However, similar fears have proved unfounded for nurse-led GI endoscopy,[16] and we have shown that a nurse bronchoscopist can achieve levels of performance at least as good as physician operators. Our experience should enable others to develop their own training and accreditation schedules, thus empowering the growth of a new nursing discipline and abolishing the image of the bronchoscopy nurse as simply the physician's assistant.

References

1. Basnyat PS, West J, Davies P, Davies PS, Foster ME. The nurse practitioner endoscopist. *Ann R Coll Surg Engl* 2000;**82**: 331–2.
2. British Society of Gastroenterology Working Party. The nurse endoscopist. London:British Society of Gastroenterology;1994.
3. Sethi T. Lung cancer. Introduction. *Thorax* 2002;**57**:992–3.
4. NUS Executive. Guidance on commissioning cancer services—the manual. Leeds: Department of Health;1998.
5. Tingle J. Clinical guidelines: legal and clinical risk management issues. *Br J Nurs* 1997;**6**:639–41.
6. British Thoracic Society. British Thoracic Society guidelines on diagnostic flexible bronchoscopy. *Thorax* 2001;**56**(suppl. 1):i1–21.
7. Stradling P.Diagnostic bronchoscopy, a teaching manual, 6th ed. London:Churchill Livingstone;1991.
8. Shaw JD, Lancer JM. A colour atlas of fibreoptic endoscopy of the upper respiratory tract. England:Wolf Medical Publications Limited;1987.

9. Prakash USB. Bronchoscopy. New York:Raven Press Limited;1997.
10. Haponik EF, Russell GB, Beamis JF, Britt EJ, Kvale P, Mathur P, Mehta A. Bronchoscopy training. Current fellows' experiences and some concerns for the future. *Chest* 2000;118: 625–30.
11. United Kingdom Central Council for Nursing, Midwifery and Health Visiting. The scope of professional practice. London:UKCC;1992.
12. United Kingdom Central Council for Nursing, Midwifery and Health Visiting. A higher level of practice—pilot standard. London:UKCC;1999.
13. Nursing and Midwifery Council. Code of professional conduct. London:NMC;2002.
14. Health Service Circular 2000/26. Patient Group Directions (England only). London:Department of Health; 2000.
15. McLean AN, Semple PA, Franklin DH, Petrie G, Millar EA, Douglas JG. The Scottish multi-centre prospective study of bronchoscopy for bronchial carcinoma and suggested audit standards. *Resp Med* 1998;**92**:1110–5.
16. Basnyat PS, Gomez KF, West J, Davies PS, Foster ME. Nurse-led direct access endoscopy clinics: the future? *Surg Endosc* 2002;**16**:166–9.